COVINGTON & BURLING
1201 PENNSYLVANIA AVENUE, N.W.
P.O. BOX 7566
WASHINGTON, D.C. 20044
(202) 662-6000

TELEFAX: (202) 662-6291
TELEX: 89-593 (COVLING WSH)
CABLE: COVLING

WRITER'S DIRECT DIAL NUMBER

ACHESON HOUSE
46 HERTFORD STREET
LONDON W1Y7TF ENGLAND
TELEPHONE: 44-71-495-5655
TELEFAX: 44-71-495-3101

BRUSSELS CORRESPONDENT OFFICE
44 AVENUE DES ARTS
BRUSSELS 1040 BELGIUM
TELEPHONE: 32-2-512-9890
TELEFAX: 32-2-502-1598

February 19, 1993

BY HAND

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

Re: Advanced Television Systems And Their Impact Upon The Existing Television Broadcast Service
MM Docket No. 87-268

Dear Ms. Searcy:

Transmitted herewith on behalf of the Association for Maximum Service Television, Inc. ("MSTV"), for filing in the above-referenced docket is a preliminary coverage analysis comparing the proposal for allotting and assigning ATV channels as set forth in the Commission's Second Further Notice of Proposed Rulemaking, MM Docket No. 87-268, 7 FCC Rcd 3340 (1992) ("Second Further Notice"), with the allotment/assignment approach as set forth in the Joint Broadcaster Comments filed in this docket on July 17, 1992, and on November 16, 1992.

This preliminary coverage analysis utilizes the basic coverage prediction methodology adopted by the ATV Advisory Committee in consultation with the Commission's staff, the standard FCC service prediction methodology, the Commission's database of existing stations, and the most recent ATV test data. Appendix A attached hereto fully describes the methodology and parameters used in the analysis.

Appendix B analyzes ATV coverage for each existing broadcast station under the approach proposed in the Second Further Notice, i.e., NTSC stations are randomly paired with

ATV channels from the sample table attached to the Second Further Notice, with each ATV station having a 55-mile service area. The analysis also provides, using the same approach, the cumulative total coverage for all ATV stations, the percentage of stations that would achieve coverage areas at least as large as their current service, and the percentage of stations that achieve an exact replication of their existing service areas.

Appendix C provides the same information using the replication/maximization principles proposed by the Joint Broadcasters in allotting ATV channels from both the VHF and UHF bands. See Second Further Notice at ¶ 12 n.16; Joint Broadcaster Comments, MM Docket No. 87-268, at 5-6 (July 17, 1992).

This analysis is preliminary in that the actual underlying values may vary depending upon the specific ATV system utilized and other variables selected in the allotment/assignment methodology. While these absolute values may vary somewhat, the analysis nonetheless demonstrates that, relative to the assignment/allotment approach proposed in the Second Further Notice, a pairing approach that utilizes replication/maximization principles and all available channels will provide significant coverage benefits.

Respectfully submitted,

Jonathan D. Blake
Gregory M. Schmidt
Charles W. Logan

Attorneys for the Association
for Maximum Service Television, Inc.

Appendix A

Preliminary Coverage Analysis

The coverage analysis submitted herewith was conducted using an allotment/assignment model described in the attached Appendix A-1.[1/] The model, implemented in software developed by the broadcast industry, was designed to determine the "best" ATV service area accommodation results for each of the proposed ATV systems. The software is capable of generating its own optimized allotment/assignment plans, improving existing plans or simply evaluating proposed allotment plans -- such as the one proposed in the Second Further Notice of Proposed Rulemaking, MM Docket No. 87-268, 7 FCC Rcd 3340 (1992) ("Second Further Notice").

To illustrate the ATV coverage implications under the FCC approach vis-a-vis the replication/maximization approach, a study was conducted to examine the difference, if any, in the coverage for ATV stations in the U.S. between the two approaches on both a cumulative and individual basis. The study also examined the percentage of stations that would achieve coverage areas at least as large as their current service areas as well as the percentage of stations that achieve an exact replication of their existing service area. In analyzing the Second Further Notice approach, referred to herein as the random pairing/UHF/55-mile analysis, the study utilized the sample Table of Allotments attached to the Second Further Notice, recent test data, and ATV station parameters identified in the Order Extending Time For Filing Comments, MM Docket No. 87-268, Attachment at 2 (released Sept. 30, 1992) ("Extension Order"). The second approach, referred to herein as the replication/maximization analysis, used the same starting point but changed channel assignments as needed to achieve the best matching between the ATV service area and the NTSC service area. The analyses were conducted taking into account only co-channel interference, not adjacent-channel or taboo interference.

Random Pairing/UHF/55-mile Analysis

To determine ATV coverage under the FCC approach it was necessary to pair channels identified in the FCC sample table with corresponding NTSC stations. Since the FCC sample table already paired those sites with a single station at them, only sites with multiple ATV channels required pairing. Those ATV

[1/] Also included in Appendix A-1 are the recommended planning factors for the new ATV service. The parameters described in the appendix are slightly different from the ones described in the Extension Order, Attachment at 2.

channels were randomly assigned NTSC channels by the computer and a complete paired FCC sample table was generated. The software then used the paired table to compute the ATV coverage area for all the station in the U.S. using the technical parameters listed below. The parameters used in this analysis were obtained from the FCC Extension Order, with the exception of the co-channel D/U ratio which was acquired from recent test data. Statistics on percentage of ATV stations achieving coverage equal or exceeding coverage and replication were computed.

ATV Height Above Average Terrain (feet)		1200 feet
ATV Effected Radiated Power	Low VHF	0.8 Kw
	High VHF	3.2 Kw
	UHF	327.9 Kw
ATV maximum service area		55.0 miles
Carrier-to-Noise ratio		16 dB
Co-channel D/U		
ATV into NTSC		34 dB
NTSC into ATV		7 dB
ATV into ATV		15 dB

Replication/Maximization Analysis

Starting with the FCC paired sample table generated from the previous analysis, the software examined each paired ATV assignment with its companion NTSC assignment to determine the degree to which the assigned paired ATV channel matched the interference-free service area of its companion station. For locations where additional channels could be assigned for ATV use, the software analyzed those channels to determine if a substitution would allow a better match and, if so, changed the assignment appropriately. Once the replication process was completed and a modified table of allotment generated, the software expanded the service areas of smaller ATV stations (up to 55 miles) so long as they did not cause any additional interference to existing NTSC service. ATV coverage was computed based on the existing NTSC station height and the power required to achieve the same NTSC grade B service area.

SPECTRUM UTILIZATION ANALYSIS FOR ATV SYSTEMS

1. Introduction

The analysis of spectrum usage of the ATV Systems employs an allotment/assignment model with algorithms similar to those used by the FCC staff and a service and interference computer program conforming to a model developed by Specialist Group 11 of PS/WP3.[1] Combining the two programs permitted the development of approximately optimum allotment/assignment plans and comparison of service expected to be provided by each ATV system, if implemented, with service provided by the NTSC system currently in use.

The plan seeks, station-by-station, to match or exceed the current interference-limited NTSC service area with a future companion ATV service area. The analysis includes consideration of vacant noncommercial allotments as well as authorized stations and pending applications.[2] Station locations and antenna heights above average terrain are assumed to be the same for the NTSC and ATV services. The software was designed to achieve, to the extent possible, the twin objectives of avoiding unacceptable interference to the NTSC service and optimization of the ATV service. Other input parameters to the program are the planning factors developed by Specialist Group 10 of PS/WP3[3] and factors specific to each ATV system as determined by the test programs at the ATTC and ATEL.

2. Model Description

Working Party 3 was given the responsibility for carrying out studies on the availability of spectrum for advanced television systems. To support this activity, two computer models were developed to determine the "best" ATV accommodation results, including the service area expected, for each of the proposed ATV formats. The first model, the allotment/assignment model, was that developed by the FCC, but modified to take into account taboo restrictions for both NTSC and ATV. The second model, the coverage and interference model, was developed to evaluate the various allotment/assignment plans generated by the first model. The coverage

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[1] Fifth Interim Report of the Spectrum Utilization and Alternatives Working Party of the ACATS Planning Subcommittee; Doc. PS/WP3-199; pp. 29-45; February 3, 1992.

[2] The data base for the reference NTSC analysis, and for the ATV analysis, is as of August 1, 1992. The need to maintain comparability for the five ATV systems studied requires that the same data base be retained throughout the analysis process. Although data base changes occur with time, those changes are moderate. The ultimate allotment/assignment table, using a current data base, will differ very little from the tables developed system-by-system.

[3] Fifth Interim Report; Doc. PS/WP3-199; pp. 22-29; February 3, 1992.

and interference model was first proposed by Specialist Group 11 of PS/WP3, then implemented in software by the broadcast industry.

a. Allotment/Assignment Model

The allotment/assignment model used in this analysis is an offspring of the FCC allotment/assignment model given to the Advisory Committee in the spring of 1990. The model uses minimum separation distances to determine the number of existing TV stations that can be accommodated with an additional ATV channel under different co-channel and adjacent-channel input conditions. Specifically, the model uses a heuristic approach to determine the "best" ATV accommodation statistics for each input condition. This is accomplished by first ordering the existing NTSC stations according to the apparent difficulty of finding a channel for them and using a number of different mathematical algorithms that try to find the largest number of stations that can be accommodated nationwide, i.e., the "best" solution. The output of the model is an allotment/assignment table that pairs NTSC stations with ATV assignments.

The allotment/assignment model is comprised of two basic modules. The first module, the constraint generator module, determines for each existing NTSC station all possible ATV channels that could be assigned for that station based on user selected minimum co-channel and adjacent- channel separation distances or constraints. The second module, the optimizer/evaluator module, assigns ATV channels to existing NTSC stations based on mathematical algorithms[4], generally referred to as successive augmentation algorithms, that iteratively search for the lowest number of ATV channels that could be assigned to accommodate the entire set of NTSC stations in a given area. These new ATV assignments satisfy both the NTSC and ATV separation distance constraints.

The FCC version of the allotment/assignment software is capable of using all of the successive augmentation algorithms mentioned in footnote 4. However, based on extensive studies and experimentation, it was determined that the Frank Box algorithm almost always achieves the highest ATV accommodation statistics. The Frank Box algorithm was therefore selected to conduct all of the allotment/assignment studies for PS/WP3.

The HDTV allotment/assignment problem is so large and so complex that it is impossible, even with the fastest computers, to examine all possible permutations to determine the best solution. Furthermore, the various permutations and solutions are somewhat related to where the analysis is started. For example, if the software is biased to start by finding ATV channels for Roanoke, Va. before finding channels for New York City, the outcome will be different than achieved with the study starting at New York City. Most likely, the overall accommodation statistics will suffer. Selection of the right starting point or points is important so as to achieve optimum or near-optimum solutions, i.e., the best ATV accommodation statistics. Again, based on extensive

[4] They include: [1] the LF (largest first) algorithm of Welsh and Powell, [2] the SL (smallest last) algorithm of Matula, [3] the DSATUR (degree of saturation) algorithm of Brelaz, [4] the RLF (recursive largest first) algorithm of Leighton, and [5] an iterative algorithm by Frank Box.

experimentation, ten starting points were selected by order of importance[5] and used as starting points for running the model.

As stated earlier, the 1990 version of the FCC model was based on fixed separation distance criteria to ascertain the availability of spectrum for ATV. The model did not attempt to consider UHF taboo restrictions between ATV assignments. A series of modifications and additions have been made to the FCC version of the model.

The modified software offers the user the following options for analysis:

1) The ability to select co-channel separation distance. The default is 155 km.

2) The ability to use different first adjacent-channel spacings for VHF and UHF as well as the ability to allow for the use of an adjacent channel with any co-located station or within a user-specified distance of any station. Both VHF and UHF first adjacent-channel restrictions default to 87.7 km.

3) The ability to consider any or all of the UHF taboos when making ATV allotments.

4) The ability to adjust any of the taboo minimum separation distances.

5) The ability to permit the use of a co-located taboo channel or the use of a taboo channel within a distance selected by the users. The default is to apply all taboo channel restrictions, including adjacent channels.

6) The ability to select the image, IF-Beat and Inter/Cross modulation taboo channels to be used in the analysis.

7) The ability to apply the adjacent-channel and any of the UHF taboo separation constraints toward both NTSC and ATV allotments. The default is to apply the constraints only toward the existing NTSC allotments.

Changes in the FCC software were limited primarily to the constraint generator module. No changes were made to the optimizer/evaluator module with the exception of generating a list of available ATV channels for each NTSC station after the allotment process was completed. No attempt was made to improve the optimizer/evaluator module. Output from the modified software program was presented in PS/WP3 document 174 entitled: "Preliminary Analysis of VHF and UHF Scenarios Part III (NTSC Taboos)".

b. Coverage and Interference Model

The coverage and interference model was developed for the purpose of comparing proponent transmission systems based on ATTC and ATEL test data, and analyzing proposed allotment plans generated by the allotment/assignment model. Specifically, the model provides the user

[5] The selected cities are: Boston, Chicago, Dallas, Detroit, Houston, Los Angeles, New York, Philadelphia, San Francisco and Washington.

with the tools to use measured RF receiver interference and noise thresholds for the various ATV systems, and translate those thresholds into expected geographical service and interference areas. The model is useful also in exploring the trade-off between the coverage areas of new ATV stations and the degree of interference protection afforded to the present television service.

The coverage and interference model comprises five basic modules and a number of integration and support modules. The first module, the input module, was designed to allow the user, through the use of menus, to specify the type of analysis desired such as a coverage and interference analysis or an ERP calculation analysis, etc., by manually inputing all necessary parameters or retrieving the information from various data bases. For example, the user has the option of conducting coverage and interference analyses for NTSC, ATV, or both NTSC and ATV for two stations or the entire United States. Station parameters could be either manually entered by the user, selected from an ASCII file specified by the user, retrieved from the FCC engineering data base, or retrieved from the allotment/assignment plan. Appropriate default values for various technical parameters were furnished, but the user has the option of modifying the default parameters as desired.

The second module, the service and interference contour calculation module, was designed to compute the sets of points that define the service and interference contours. The computation uses the FCC 50/50 and 50/10 propagation curves, the 30-second terrain data base, and the methods specified in the FCC's Rules and Regulations. The module was also designed to generate FCC 50/90 curves for digital system service calculations. In addition, the module, if specified by the user, is capable of calculating the coverage and interference using the terrain roughness correction factor specified in the FCC Rules. The terrain roughness correction factor, however, was not applied in the PS/WP3 spectrum utilization analysis.

The third module, the service and interference area calculation module, was designed to calculate the coverage area enclosed by specified contours (Grade B for NTSC, noise-limited threshold for ATV), and the portion of the coverage area that is free of interference i.e., the interference-limited service area of a station. Specifically, this module determines the amount of interference received (if any) as well as the severity of the interference, including the area within the coverage contour where interference is present, the direction from the interference source, and identification of the station or stations causing the interference. The interference-limited service area is determined taking into account co-channel, and any or all of the adjacent and taboo channels.

The fourth module, the co-channel ERP calculation module, calculates the maximum ERP allowed for a proposed ATV facility based on HAAT and a specified penetration distance of interference from the undesired station into the coverage contour of the desired station. Calculations can be made over a range of heights above average terrain.

The fifth and last module is a graphical display module that provides a plot or plots of the particular analysis selected. The module was designed to support an HP-GL plotter protocol. Plotting parameters, such as color selection and scaling, are user specified.

c. Integration of Allotment/Assignment Model with Coverage and Interference Model

SG-11 of PS/WP3 was tasked with the responsibility of developing a coverage and interference model to evaluate and compare ATV transmission systems and evaluate proposed allotment plans. Specifically, the group was tasked with implementing a model that is capable of meeting the following three reasonable, but conflicting, objectives for an ATV simulcast service[6] :

1) All, or nearly all, present NTSC assignments should have an assigned ATV simulcast channel.

2) An ATV simulcast station should have a service area that is at least comparable to the service area of the NTSC station to which it is paired.

3) Reception of existing NTSC stations should not be impacted significantly by interference from new ATV stations.

To assess how well these objectives are met for the various ATV formats, further software development was deemed necessary. The concept of pairing ATV assignments with NTSC stations based on comparable coverage necessitated linking the output of the allotment/assignment model to the coverage and interference model so as to determine how ATV channels that are available for assignment could be used to achieve the best matching with NTSC service areas.

The process of improving the assignment plan by incorporating the concept of automatic interference matching required the use and continuous update of the list of available channels generated by the allotment/assignment model. In addition to linking both models, new software was developed to perform two essential functions. The first function is to analyze the existing NTSC environment and create a data base (baseline) of existing NTSC interference. The second is to analyze and improve the ATV plan generated by the allotment/assignment model.

The exercise of creating a baseline of existing NTSC interference needed to be made only once. The data base created takes into consideration co-channel, adjacent-channel and UHF taboo interference and will be used throughout the analyses of the several ATV formats. A more detailed description of the NTSC parameters is described in the next section.

The analysis of improving the ATV allotment plan is a multi-step iterative process. Some steps occur simultaneously, while others are sequential.

Step 1: Using an ATV plan generated by the allotment/assignment model, the model analyzes each paired ATV assignment with its companion NTSC assignment to determine whether the assigned paired ATV channel matches the interference area of its companion NTSC station. For locations where additional channels could be assigned for ATV use, the software analyzes those channels to determine if a substitution would allow a better match. The analysis is conducted using the criteria described in steps 3 and 4.

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[6] See contribution of Specialist Group-11 to 5th Interim Report; Doc. PS/WP3-197, December 11, 1991.

Since there are many cases where a large number of additional channels are available, and since the time taken to conduct each analysis is significant, substitution of channels was not made in the event of no interference or non-matching interference of less than a specified amount or percentage selected by the user. In addition, since a channel may be assigned at more than one location, assignments with ATV service areas departing by the greatest amounts from their companion NTSC station service areas were considered first when performing this analysis. Selection of a starting point(s) is similar to the process described in the allotment model.

Step 2: For NTSC stations that are co-located (or those within a user-specified distance), the software reexamines the ATV assignments made to the co-located stations to determine whether a different channel pairing scheme would produce further improvements by looking for an optimum local solution (all the stations that are co-located) rather than each station individually. The technique used to look for an optimum local solution is a max/min service area trade-off technique.

Step 3: For each NTSC station, the program compares the baseline interference of that NTSC station to the interference that would be received from the current plan's ATV assignments, and attempts to change the ATV assignments and/or change the ATV or NTSC power or both[7], to minimize interference to NTSC. Determination of the area of interference from the ATV assignment not overlapped by interference from NTSC sources is achieved by subtraction using two-dimensional service area array techniques.

Step 4: For all ATV stations, the interference received by each of the proposed ATV stations from existing NTSC stations and other ATV assignments, is compared with the baseline for the paired NTSC station. The comparison is made to determine where a proposed ATV assignment would receive interference that is different from that of the paired NTSC station. The comparison is used for the analyses in steps 1 and 2 and to evaluate the modified plan once completed. Results of the comparison were used to plot figures 1 through 6 in this report.

Step 5: For all ATV stations, the interference received by the proposed ATV stations from other ATV assignments is compared with the baseline of the paired NTSC station. In addition to comparing the total amounts of interference received, the comparison determines where the proposed ATV assignments would receive interference to areas within their coverage contours that would be different from interference areas of the paired NTSC stations (non-overlapping interference).

3. Baseline NTSC Parameters

An initial NTSC computer run (baseline) provides the reference for each of the ATV systems tested. The run includes Grade B coverage and interference-limited service for each of the approximately 1700 authorized and applied-for television facilities in the FCC data base.

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[7] The procedure of changing the ATV and/or NTSC power to reduce the interference is not being applied in the PS/WP3 analysis. Such a method will make comparison among systems more difficult, and was developed primarily to allow stations with smaller NTSC and ATV service areas (less than 35 in miles) to increase their service areas. One advantage of this technique is to reduce significantly the interference to NTSC stations.

Interference-limited NTSC service areas were determined on the basis of a co-channel desired-to-undesired (D/U) ratio of 28 dB, and first adjacent D/U ratios of -6 dB for interference from the lower adjacent channel and -12 dB for interference from the upper adjacent channel. Taboo considerations are based on threshold of interference (TOV) data from ATTC[8]. Subjective tests at ATEL of NTSC/NTSC interference showed that a 28 dB co-channel ratio corresponded to a CCIR impairment rating of 3 for NTSC stations using precise offset[9]. Accordingly, co-channel interference from ATV to NTSC is based also on impairment grade 3. NTSC receiving antennas beyond the City Grade contour are assumed to have a front-to-back (F/B) ratio of 6 dB. No directivity is assumed for receiving antennas within the City Grade contour. NTSC service is based on median (f(50,50)) signal strength. Interfering signals for both NTSC and ATV employ 10 percent of the time (f(50,10)) propagation data.

The outer limit of NTSC service in the absence of interference is considered to be the Grade B level. As specified by the FCC, the median field strengths corresponding to Grade B are: 47 dBμ for low VHF, 56 dBμ for high VHF, and 64 dBμ for UHF. The outer limit of ATV service in the absence of interference is that determined by the carrier-to-noise ratio yielding a CCIR impairment grade of 4. For digital signal, calculations of service are based on FCC f(50,90) propagation curves for both noise and interference-limited conditions.

4. Receiver Planning Factors Applicable to All ATV Systems

	Low VHF	High VHF	UHF
Antenna Impedance (ohms)	75.0	75.0	75.0
Bandwidth (Mhz)	6.0	6.0	6.0
Thermal Noise (dBm)	-106.2	-106.2	-106.2
Noise Figure (dB)	10.0	10.0	10.0
Frequency (Mhz)	69	194	615
Antenna Factor (dBm/dBμ)	-111.7	-120.7	-130.7
Line Loss (dB)	1.0	2.0	4.0
Antenna gain (dB)	4.0	6.0	10.0
Antenna F/B Ratio (dB)*	10	12	14

* In addition to F/B ratio, a formula is employed for the forward lobe simulating an actual receiving antenna pattern.

[8] The TOV taboo data used for the baseline analysis were obtained from the ATTC N-MUSE report.

[9] The same subjective tests showed that a 40 dB co-channel ratio corresponded to a CCIR impairment rating of 3, and that 28 dB corresponded to a rating of approximately 2, for NTSC stations using the worst possible offset. Neither the FCC's TV station data base nor the data base used in these calculations show which NTSC stations are actually employing offset. Consequently, the NTSC baseline interference-limited service area calculations may overstate the actual NTSC service areas by some unknown amount.

References

[1] D.J. A. Welsh and M. B. Powell, "An Upper Bound for the Chromatic Number of a Graph and its Application to Timetabling Problems", Computer Journal, Vol. 10, 1967.

[2] David W. Matula, G. Marble and J.D. Isaacson, "Graph Coloring Algorithms", Graph Theory and Computing, R.C. Read, editor; Academic Press, N.Y. 1972.

[3] Daniel Brelaz,"New Methods to Color the Vertices of a Graph," Comm. of the ACM, Vol. 22, No. 4, April 1979.

[4] Frank T. Leighton, "A Graph Coloring Algorithm for Large Scheduling Problems," Jour. of Research of the National Bureau of Standards, Vol.84, No. 6, November-December 1979.

[5] Frank Box, "A Heuristic Technique for Assigning Radio Frequencies to Mobile Radio Nets," IEEE Trans. Veh. Technology. Vol. VT-27, No. 2, May 1978.

Appendix B: ATV Coverage Under Approach Proposed in Second Further Notice

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KTUU	ANCHORAGE AK	53A	327.90	366.0	24605.7	88.5
KTBY	ANCHORAGE AK	69A	327.90	366.0	24605.7	88.5
KYES	ANCHORAGE AK	42A	327.90	366.0	24605.7	88.5
KAKM	ANCHORAGE AK	52A	327.90	366.0	24605.7	88.5
KZXC	ANCHORAGE AK	46A	327.90	366.0	24605.7	88.5
KTVA	ANCHORAGE AK	50A	327.90	366.0	24605.7	88.5
KIMO	ANCHORAGE AK	62A	327.90	366.0	24605.7	88.5
KDMD	ANCHORAGE AK	67A	327.90	366.0	24605.7	88.5
KYUK	BETHEL AK	65A	327.90	366.0	24605.7	88.5
KATN	FAIRBANKS AK	69A	327.90	366.0	24605.7	88.5
KUAC	FAIRBANKS AK	28A	327.90	366.0	24605.7	88.5
KTVF	FAIRBANKS AK	52A	327.90	366.0	24605.7	88.5
KTOO	JUNEAU AK	66A	327.90	366.0	24605.7	88.5
KJUD	JUNEAU AK	61A	327.90	366.0	24605.7	88.5
KJNP	NORTH POLE AK	54A	327.90	366.0	24605.7	88.5
KTNL	SITKA AK	18A	327.90	366.0	24605.7	88.5
WJSU	ANNISTON AL	27A	327.90	366.0	24605.7	88.5
WBRC	BIRMINGHAM AL	50A	327.90	366.0	24605.7	88.5
WBIQ	BIRMINGHAM AL	63A	327.90	366.0	24605.7	88.5
WVTM	BIRMINGHAM AL	58A	327.90	366.0	24605.7	88.5
WBMG	BIRMINGHAM AL	53A	327.90	366.0	24605.7	88.5
WABM	BIRMINGHAM AL	46A	327.90	366.0	24605.7	88.5
WIIQ	DEMOPOLIS AL	62A	327.90	366.0	24605.7	88.5
WTVY	DOTHAN AL	30A	327.90	366.0	24605.7	88.5
WDHN	DOTHAN AL	63A	327.90	366.0	24605.7	88.5
WRKJ	DOTHAN AL	69A	327.90	366.0	24605.7	88.5
WDIQ	DOZIER AL	36A	327.90	366.0	24605.7	88.5
WOWL	FLORENCE AL	52A	327.90	366.0	24605.7	88.5
WTRT	FLORENCE AL	67A	327.90	366.0	24605.7	88.5
WFIQ	FLORENCE AL	38A	327.90	366.0	24605.7	88.5
WNAL	GADSDEN AL	16A	327.90	366.0	24605.7	88.5
WTJP	GADSDEN AL	24A	327.90	366.0	24605.7	88.5
WTTO	HOMEWOOD AL	35A	327.90	366.0	24605.7	88.5
WHNT	HUNTSVILLE AL	41A	327.90	366.0	24605.7	88.5
WHIQ	HUNTSVILLE AL	34A	327.90	366.0	24605.7	88.5
WAAY	HUNTSVILLE AL	49A	327.90	366.0	24605.7	88.5
WAFF	HUNTSVILLE AL	64A	327.90	366.0	24605.7	88.5
WZDX	HUNTSVILLE AL	51A	327.90	366.0	24605.7	88.5
WGIQ	LOUISVILLE AL	15A	327.90	366.0	24605.7	88.5
WKRG	MOBILE AL	27A	327.90	366.0	24605.7	88.5

CALL	CITY - S	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
WALA	MOBILE AL	17A	327.90	366.0	24605.7	88.5
WPMI	MOBILE AL	55A	327.90	366.0	24605.7	88.5
WMPV	MOBILE AL	61A	327.90	366.0	24605.7	88.5
WEIQ	MOBILE AL	29A	327.90	366.0	24605.7	88.5
WSFA	MONTGOMERY AL	57A	327.90	366.0	24605.7	88.5
WCOV	MONTGOMERY AL	19A	327.90	366.0	24605.7	88.5
WAIQ	MONTGOMERY AL	29A	327.90	366.0	24605.7	88.5
WHOA	MONTGOMERY AL	47A	327.90	366.0	24605.7	88.5
WMCF	MONTGOMERY AL	49A	327.90	366.0	24605.7	88.5
WCIQ	MOUNT CHEAHA AL	55A	327.90	366.0	24605.7	88.5
WSWS	OPELIKA AL	51A	327.90	366.0	24605.7	88.5
WDAU	OZARK AL	41A	327.90	366.0	24605.7	88.5
WAKA	SELMA AL	52A	327.90	366.0	24605.7	88.5
WRJH	TROY AL	65A	327.90	366.0	24605.7	88.5
WDBB	TUSCALOOSA AL	28A	327.90	366.0	24605.7	88.5
WCFT	TUSCALOOSA AL	61A	327.90	366.0	24605.7	88.5
NEW	TUSKEGEE AL	23A	327.90	366.0	24605.7	88.5
KETG	ARKADELPHIA AR	34A	327.90	366.0	24605.7	88.5
KTVE	EL DORADO AR	59A	327.90	366.0	24605.7	88.5
KAFT	FAYETTEVILLE AR	68A	327.90	366.0	24605.7	88.5
KHOG	FAYETTEVILLE AR	56A	327.90	366.0	24605.7	88.5
KFSM	FORT SMITH AR	54A	327.90	366.0	24605.7	88.5
KPOM	FORT SMITH AR	43A	327.90	366.0	24605.7	88.5
KHBS	FORT SMITH AR	57A	327.90	366.0	24605.7	88.5
KRZB	HOT SPRINGS AR	66A	327.90	366.0	24605.7	88.5
KAIT	JONESBORO AR	26A	327.90	366.0	24605.7	88.5
KTEJ	JONESBORO AR	20A	327.90	366.0	24605.7	88.5
NEW	JONESBORO AR	51A	327.90	366.0	24605.7	88.5
KETS	LITTLE ROCK AR	58A	327.90	366.0	24605.7	88.5
KARK	LITTLE ROCK AR	30A	327.90	366.0	24605.7	88.5
KATV	LITTLE ROCK AR	32A	327.90	366.0	24605.7	88.5
KTHV	LITTLE ROCK AR	60A	327.90	366.0	24605.7	88.5
KLRT	LITTLE ROCK AR	61A	327.90	366.0	24605.7	88.5
KVUT	LITTLE ROCK AR	41A	327.90	366.0	24605.7	88.5
KEMV	MOUNTAIN VIEW AR	39A	327.90	366.0	24605.7	88.5
KLEP	NEWARK AR	44A	327.90	366.0	24605.7	88.5
KVTN	PINE BLUFF AR	21A	327.90	366.0	24605.7	88.5
KASN	PINE BLUFF AR	69A	327.90	366.0	24605.7	88.5
KFAA	ROGERS AR	50A	327.90	366.0	24605.7	88.5
KNAZ	FLAGSTAFF AZ	56A	327.90	366.0	24605.7	88.5

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KZJC	FLAGSTAFF AZ	38A	327.90	366.0	24605.7	88.5
KVPY	FLAGSTAFF AZ	28A	327.90	366.0	24605.7	88.5
KKTM	FLAGSTAFF AZ	22A	327.90	366.0	24605.7	88.5
KXGR	GREEN VALLEY AZ	39A	327.90	366.0	24605.7	88.5
KMOH	KINGMAN AZ	65A	327.90	366.0	24605.7	88.5
KPNX	MESA AZ	57A	327.90	366.0	24605.7	88.5
KMSB	NOGALES AZ	32A	327.90	366.0	24605.7	88.5
KTVK	PHOENIX AZ	63A	327.90	366.0	24605.7	88.5
KPHO	PHOENIX AZ	24A	327.90	366.0	24605.7	88.5
KAET	PHOENIX AZ	29A	327.90	366.0	24605.7	88.5
KTSP	PHOENIX AZ	36A	327.90	366.0	24605.7	88.5
KNXV	PHOENIX AZ	52A	327.90	366.0	24605.7	88.5
KPAZ	PHOENIX AZ	59A	327.90	366.0	24605.7	88.5
KTVW	PHOENIX AZ	42A	327.90	366.0	24605.7	88.5
KUTP	PHOENIX AZ	43A	327.90	366.0	24605.7	88.5
NEW	PHOENIX AZ	58A	327.90	366.0	24605.7	88.5
KUSK	PRESCOTT AZ	48A	327.90	366.0	24605.7	88.5
NEW	TOLLESON AZ	30A	327.90	366.0	24605.7	88.5
KVOA	TUCSON AZ	65A	327.90	366.0	24605.7	88.5
KUAT	TUCSON AZ	23A	327.90	366.0	24605.7	88.5
KGUN	TUCSON AZ	68A	327.90	366.0	24605.7	88.5
KOLD	TUCSON AZ	49A	327.90	366.0	24605.7	88.5
KTTU	TUCSON AZ	60A	327.90	366.0	24605.7	88.5
KUAS	TUCSON AZ	44A	327.90	366.0	24605.7	88.5
KHRR	TUCSON AZ	62A	327.90	366.0	24605.7	88.5
KYMA	YUMA AZ	22A	327.90	366.0	24605.7	88.5
KSWT	YUMA AZ	26A	327.90	366.0	24605.7	88.5
KDOC	ANAHEIM CA	53A	327.90	366.0	24605.7	88.5
KAEF	ARCATA CA	14A	327.90	366.0	24605.7	88.5
NEW	AVALON CA	64A	327.90	366.0	24605.7	88.5
KGET	BAKERSFIELD CA	54A	327.90	366.0	24605.7	88.5
KERO	BAKERSFIELD CA	36A	327.90	366.0	24605.7	88.5
KBAK	BAKERSFIELD CA	27A	327.90	366.0	24605.7	88.5
NEW	BAKERSFIELD CA	67A	327.90	366.0	24605.7	88.5
KUZZ	BAKERSFIELD CA	44A	327.90	366.0	24605.7	88.5
KHIZ	BARSTOW CA	41A	327.90	366.0	24605.7	88.5
KBBL	BIG BEAR LAKE CA	51A	327.90	366.0	24605.7	88.5
NEW	CERES CA	22A	327.90	366.0	24605.7	88.5
KHSL	CHICO CA	60A	327.90	366.0	24605.7	88.5
KCPM	CHICO CA	56A	327.90	366.0	24605.7	88.5

CALL CITY - S	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KSDI CLOVIS CA	41A	327.90	366.0	24605.7	88.5
KFCB CONCORD CA	43A	327.90	366.0	24605.7	88.5
KVEA CORONA CA	26A	327.90	366.0	24605.7	88.5
KRCB COTATI CA	23A	327.90	366.0	24605.7	88.5
KLXO EL CENTRO CA	58A	327.90	366.0	24605.7	88.5
KECY EL CENTRO CA	40A	327.90	366.0	24605.7	88.5
KIEM EUREKA CA	43A	327.90	366.0	24605.7	88.5
KVIQ EUREKA CA	19A	327.90	366.0	24605.7	88.5
KEET EUREKA CA	20A	327.90	366.0	24605.7	88.5
KZJA EUREKA CA	38A	327.90	366.0	24605.7	88.5
KFWU FORT BRAGG CA	41A	327.90	366.0	24605.7	88.5
KVPT FRESNO CA	34A	327.90	366.0	24605.7	88.5
KSEE FRESNO CA	69A	327.90	366.0	24605.7	88.5
KFSN FRESNO CA	32A	327.90	366.0	24605.7	88.5
KJEO FRESNO CA	66A	327.90	366.0	24605.7	88.5
KAIL FRESNO CA	64A	327.90	366.0	24605.7	88.5
KFTV HANFORD CA	57A	327.90	366.0	24605.7	88.5
KOCE HUNTINGTON BEACH CA	39A	327.90	366.0	24605.7	88.5
KCBS LOS ANGELES CA	66A	327.90	366.0	24605.7	88.5
KNBC LOS ANGELES CA	47A	327.90	366.0	24605.7	88.5
KTLA LOS ANGELES CA	69A	327.90	366.0	24605.7	88.5
KABC LOS ANGELES CA	8A	3.20	366.0	24550.2	88.4
KCAL LOS ANGELES CA	48A	327.90	366.0	24605.7	88.5
KTTV LOS ANGELES CA	35A	327.90	366.0	24605.7	88.5
KCOP LOS ANGELES CA	32A	327.90	366.0	24605.7	88.5
KWHY LOS ANGELES CA	65A	327.90	366.0	24605.7	88.5
KCET LOS ANGELES CA	38A	327.90	366.0	24605.7	88.5
KMEX LOS ANGELES CA	60A	327.90	366.0	24605.7	88.5
KLCS LOS ANGELES CA	31A	327.90	366.0	24605.7	88.5
KEEF LOS ANGELES CA	25A	327.90	366.0	24605.7	88.5
KVMG MERCED CA	68A	327.90	366.0	24605.7	88.5
KCSO MODESTO CA	50A	327.90	366.0	24605.7	88.5
KMST MONTEREY CA	52A	327.90	366.0	24605.7	88.5
KSMS MONTEREY CA	31A	327.90	366.0	24605.7	88.5
KWOK NOVATO CA	19A	327.90	366.0	24605.7	88.5
KTVU OAKLAND CA	45A	327.90	366.0	24605.7	88.5
KNSC ONTARIO CA	10A	3.20	366.0	24550.2	88.4
KADY OXNARD CA	49A	327.90	366.0	24605.7	88.5
KMIR PALM SPRINGS CA	68A	327.90	366.0	24605.7	88.5
KESQ PALM SPRINGS CA	54A	327.90	366.0	24605.7	88.5

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KBCP	PARADISE CA	69A	327.90	366.0	24605.7	88.5
KKAK	PORTERVILLE CA	50A	327.90	366.0	24605.7	88.5
KRPA	RANCHO PALOS VERDES CA	36A	327.90	366.0	24605.7	88.5
KRCR	REDDING CA	34A	327.90	366.0	24605.7	88.5
KIXE	REDDING CA	54A	327.90	366.0	24605.7	88.5
KRCA	RIVERSIDE CA	15A	327.90	366.0	24605.7	88.5
KCRA	SACRAMENTO CA	55A	327.90	366.0	24605.7	88.5
KVIE	SACRAMENTO CA	47A	327.90	366.0	24605.7	88.5
KXTV	SACRAMENTO CA	62A	327.90	366.0	24605.7	88.5
KCNY	SACRAMENTO CA	14A	327.90	366.0	24605.7	88.5
KRBK	SACRAMENTO CA	24A	327.90	366.0	24605.7	88.5
KTXL	SACRAMENTO CA	35A	327.90	366.0	24605.7	88.5
NEW	SACRAMENTO CA	25A	327.90	366.0	24605.7	88.5
KSBW	SALINAS CA	28A	327.90	366.0	24605.7	88.5
KCBA	SALINAS CA	58A	327.90	366.0	24605.7	88.5
KSCI	SAN BERNARDINO CA	43A	327.90	366.0	24605.7	88.5
KVCR	SAN BERNARDINO CA	19A	327.90	366.0	24605.7	88.5
KZKI	SAN BERNARDINO CA	55A	327.90	366.0	24605.7	88.5
KFMB	SAN DIEGO CA	16A	327.90	366.0	24605.7	88.5
KGTV	SAN DIEGO CA	25A	327.90	366.0	24605.7	88.5
KPBS	SAN DIEGO CA	9A	3.20	366.0	24550.2	88.4
KNSD	SAN DIEGO CA	55A	327.90	366.0	24605.7	88.5
KUSI	SAN DIEGO CA	63A	327.90	366.0	24605.7	88.5
KTTY	SAN DIEGO CA	65A	327.90	366.0	24605.7	88.5
KRON	SAN FRANCISCO CA	29A	327.90	366.0	24605.7	88.5
KPIX	SAN FRANCISCO CA	51A	327.90	366.0	24605.7	88.5
KGOT	SAN FRANCISCO CA	39A	327.90	366.0	24605.7	88.5
KQED	SAN FRANCISCO CA	27A	327.90	366.0	24605.7	88.5
KDTV	SAN FRANCISCO CA	21A	327.90	366.0	24605.7	88.5
KOFY	SAN FRANCISCO CA	56A	327.90	366.0	24605.7	88.5
KTSF	SAN FRANCISCO CA	57A	327.90	366.0	24605.7	88.5
KQEC	SAN FRANCISCO CA	61A	327.90	366.0	24605.7	88.5
KCNS	SAN FRANCISCO CA	34A	327.90	366.0	24605.7	88.5
KBHK	SAN FRANCISCO CA	30A	327.90	366.0	24605.7	88.5
KNTV	SAN JOSE CA	63A	327.90	366.0	24605.7	88.5
KICU	SAN JOSE CA	69A	327.90	366.0	24605.7	88.5
KSTS	SAN JOSE CA	53A	327.90	366.0	24605.7	88.5
KTEH	SAN JOSE CA	49A	327.90	366.0	24605.7	88.5
KLXV	SAN JOSE CA	12A	3.20	366.0	24550.2	88.4
KSBY	SAN LUIS OBISPO CA	60A	327.90	366.0	24605.7	88.5

CALL	CITY - S	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KADE	SAN LUIS OBISPO CA	56A	327.90	366.0	24605.7	88.5
KCSM	SAN MATEO CA	59A	327.90	366.0	24605.7	88.5
KMSG	SANGER CA	38A	327.90	366.0	24605.7	88.5
KTBN	SANTA ANA CA	61A	327.90	366.0	24605.7	88.5
KEYT	SANTA BARBARA CA	41A	327.90	366.0	24605.7	88.5
NEW	SANTA BARBARA CA	24A	327.90	366.0	24605.7	88.5
KCOY	SANTA MARIA CA	30A	327.90	366.0	24605.7	88.5
KFTY	SANTA ROSA CA	65A	327.90	366.0	24605.7	88.5
KOVR	STOCKTON CA	46A	327.90	366.0	24605.7	88.5
KSCH	STOCKTON CA	67A	327.90	366.0	24605.7	88.5
KFTL	STOCKTON CA	41A	327.90	366.0	24605.7	88.5
KVMD	TWENTYNINE PALMS CA	46A	327.90	366.0	24605.7	88.5
KPST	VALLEJO CA	33A	327.90	366.0	24605.7	88.5
KSTV	VENTURA CA	59A	327.90	366.0	24605.7	88.5
KMPH	VISALIA CA	62A	327.90	366.0	24605.7	88.5
KNXT	VISALIA CA	15A	327.90	366.0	24605.7	88.5
KCAH	WATSONVILLE CA	40A	327.90	366.0	24605.7	88.5
KTVJ	BOULDER CO	39A	327.90	366.0	24605.7	88.5
KBDI	BROOMFIELD CO	44A	327.90	366.0	24605.7	88.5
KWHD	CASTLE ROCK CO	64A	327.90	366.0	24605.7	88.5
KKTV	COLORADO SPRINGS CO	16A	327.90	366.0	24605.7	88.5
KRDO	COLORADO SPRINGS CO	23A	327.90	366.0	24605.7	88.5
KXRM	COLORADO SPRINGS CO	58A	327.90	366.0	24605.7	88.5
KWGN	DENVER CO	35A	327.90	366.0	24605.7	88.5
KCNC	DENVER CO	34A	327.90	366.0	24605.7	88.5
KRMA	DENVER CO	28A	327.90	366.0	24605.7	88.5
KMGH	DENVER CO	66A	327.90	366.0	24605.7	88.5
KUSA	DENVER CO	46A	327.90	366.0	24605.7	88.5
KTVD	DENVER CO	30A	327.90	366.0	24605.7	88.5
KDVR	DENVER CO	17A	327.90	366.0	24605.7	88.5
KWBI	DENVER CO	55A	327.90	366.0	24605.7	88.5
KCEC	DENVER CO	48A	327.90	366.0	24605.7	88.5
KUBD	DENVER CO	57A	327.90	366.0	24605.7	88.5
KREZ	DURANGO CO	55A	327.90	366.0	24605.7	88.5
NEW	FORT COLLINS CO	56A	327.90	366.0	24605.7	88.5
KREG	GLENWOOD SPRINGS CO	54A	327.90	366.0	24605.7	88.5
KREX	GRAND JUNCTION CO	62A	327.90	366.0	24605.7	88.5
KJCT	GRAND JUNCTION CO	28A	327.90	366.0	24605.7	88.5
KZJG	LONGMONT CO	69A	327.90	366.0	24605.7	88.5
KREY	MONTROSE CO	36A	327.90	366.0	24605.7	88.5

CALL	CITY - S	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
KOAA	PUEBLO CO	63A	327.90	366.0	24605.7	88.5
KTSC	PUEBLO CO	33A	327.90	366.0	24605.7	88.5
KSBS	STEAMBOAT SPRINGS CO	58A	327.90	366.0	24605.7	88.5
KTVS	STERLING CO	15A	327.90	366.0	24605.7	88.5
WHAI	BRIDGEPORT CT	39A	327.90	366.0	24605.7	88.5
WEDW	BRIDGEPORT CT	12A	3.20	366.0	24550.2	88.4
WFSB	HARTFORD CT	32A	327.90	366.0	24605.7	88.5
WHCT	HARTFORD CT	63A	327.90	366.0	24605.7	88.5
WEDH	HARTFORD CT	29A	327.90	366.0	24605.7	88.5
WTIC	HARTFORD CT	35A	327.90	366.0	24605.7	88.5
WVIT	NEW BRITAIN CT	34A	327.90	366.0	24605.7	88.5
WTNH	NEW HAVEN CT	46A	327.90	366.0	24605.7	88.5
WTVU	NEW HAVEN CT	52A	327.90	366.0	24605.7	88.5
WEDY	NEW HAVEN CT	17A	327.90	366.0	24605.7	88.5
WTWS	NEW LONDON CT	50A	327.90	366.0	24605.7	88.5
WEDN	NORWICH CT	9A	3.20	366.0	24550.2	88.4
WTXX	WATERBURY CT	60A	327.90	366.0	24605.7	88.5
WRCT	WASHINGTON DC	34A	327.90	366.0	24605.7	88.5
WTTG	WASHINGTON DC	35A	327.90	366.0	24605.7	88.5
WJLA	WASHINGTON DC	36A	327.90	366.0	24605.7	88.5
WUSA	WASHINGTON DC	48A	327.90	366.0	24605.7	88.5
WDCA	WASHINGTON DC	30A	327.90	366.0	24605.7	88.5
WETA	WASHINGTON DC	59A	327.90	366.0	24605.7	88.5
WHMM	WASHINGTON DC	57A	327.90	366.0	24605.7	88.5
WFTY	WASHINGTON DC	29A	327.90	366.0	24605.7	88.5
WDPB	SEAFORD DE	33A	327.90	366.0	24605.7	88.5
WHYY	WILMINGTON DE	36A	327.90	366.0	24605.7	88.5
WTGI	WILMINGTON DE	68A	327.90	366.0	24605.7	88.5
WPPB	BOCA RATON FL	50A	327.90	366.0	24605.7	88.5
NEW	BRADENTON FL	42A	327.90	366.0	24605.7	88.5
WDRU	BUNNELL FL	38A	327.90	366.0	24605.7	88.5
WFTX	CAPE CORAL FL	24A	327.90	366.0	24605.7	88.5
WCLF	CLEARWATER FL	25A	327.90	366.0	24605.7	88.5
WKCF	CLERMONT FL	23A	327.90	366.0	24605.7	88.5
WTGL	COCOA FL	33A	327.90	366.0	24605.7	88.5
WBCC	COCOA FL	47A	327.90	366.0	24605.7	88.5
WESH	DAYTONA BEACH FL	54A	327.90	366.0	24605.7	88.5
WAYQ	DAYTONA BEACH FL	69A	327.90	366.0	24605.7	88.5
WSCV	FORT LAUDERDALE FL	40A	327.90	366.0	24605.7	88.5
WINK	FORT MYERS FL	41A	327.90	366.0	24605.7	88.5

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
WBBH	FORT MYERS FL	55A	327.90	366.0	24605.7	88.5
WSFP	FORT MYERS FL	54A	327.90	366.0	24605.7	88.5
WTCE	FORT PIERCE FL	22A	327.90	366.0	24605.7	88.5
WTVX	FORT PIERCE FL	48A	327.90	366.0	24605.7	88.5
WFGX	FORT WALTON BEACH FL	38A	327.90	366.0	24605.7	88.5
WPAN	FORT WALTON BEACH FL	31A	327.90	366.0	24605.7	88.5
WAMD	FORT WALTON BEACH FL	59A	327.90	366.0	24605.7	88.5
WUFT	GAINESVILLE FL	32A	327.90	366.0	24605.7	88.5
WCJB	GAINESVILLE FL	34A	327.90	366.0	24605.7	88.5
WGFL	HIGH SPRINGS FL	68A	327.90	366.0	24605.7	88.5
WYHS	HOLLYWOOD FL	19A	327.90	366.0	24605.7	88.5
WGOX	INVERNESS FL	41A	327.90	366.0	24605.7	88.5
WKEB	ISLAMORADA FL	21A	327.90	366.0	24605.7	88.5
WJXT	JACKSONVILLE FL	50A	327.90	366.0	24605.7	88.5
WJCT	JACKSONVILLE FL	66A	327.90	366.0	24605.7	88.5
WTLV	JACKSONVILLE FL	29A	327.90	366.0	24605.7	88.5
WJKS	JACKSONVILLE FL	16A	327.90	366.0	24605.7	88.5
WAWS	JACKSONVILLE FL	48A	327.90	366.0	24605.7	88.5
WNFT	JACKSONVILLE FL	19A	327.90	366.0	24605.7	88.5
WJEB	JACKSONVILLE FL	67A	327.90	366.0	24605.7	88.5
WAFD	KEY WEST FL	34A	327.90	366.0	24605.7	88.5
WEYS	KEY WEST FL	58A	327.90	366.0	24605.7	88.5
WHBI	LAKE WORTH FL	66A	327.90	366.0	24605.7	88.5
WTMV	LAKELAND FL	53A	327.90	366.0	24605.7	88.5
WLCB	LEESBURG FL	21A	327.90	366.0	24605.7	88.5
WACX	LEESBURG FL	49A	327.90	366.0	24605.7	88.5
WFXU	LIVE OAK FL	56A	327.90	366.0	24605.7	88.5
WBSF	MELBOURNE FL	46A	327.90	366.0	24605.7	88.5
WIRB	MELBOURNE FL	39A	327.90	366.0	24605.7	88.5
WPBT	MIAMI FL	31A	327.90	366.0	24605.7	88.5
WTVJ	MIAMI FL	44A	327.90	366.0	24605.7	88.5
WCIX	MIAMI FL	56A	327.90	366.0	24605.7	88.5
WSVN	MIAMI FL	47A	327.90	366.0	24605.7	88.5
WPLG	MIAMI FL	16A	327.90	366.0	24605.7	88.5
WLRN	MIAMI FL	32A	327.90	366.0	24605.7	88.5
WLTV	MIAMI FL	38A	327.90	366.0	24605.7	88.5
WBFS	MIAMI FL	52A	327.90	366.0	24605.7	88.5
NEW	MIAMI FL	60A	327.90	366.0	24605.7	88.5
WDZL	MIAMI FL	18A	327.90	366.0	24605.7	88.5
WHFT	MIAMI FL	53A	327.90	366.0	24605.7	88.5

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
WEVU	NAPLES FL	68A	327.90	366.0	24605.7	88.5
WNPL	NAPLES FL	43A	327.90	366.0	24605.7	88.5
WCEU	NEW SMYRNA BEACH FL	40A	327.90	366.0	24605.7	88.5
WOGX	OCALA FL	39A	327.90	366.0	24605.7	88.5
WYDP	ORANGE PARK FL	42A	327.90	366.0	24605.7	88.5
WCPX	ORLANDO FL	31A	327.90	366.0	24605.7	88.5
WFTV	ORLANDO FL	36A	327.90	366.0	24605.7	88.5
WMFE	ORLANDO FL	61A	327.90	366.0	24605.7	88.5
WZWY	ORLANDO FL	14A	327.90	366.0	24605.7	88.5
WOFL	ORLANDO FL	62A	327.90	366.0	24605.7	88.5
WRBW	ORLANDO FL	30A	327.90	366.0	24605.7	88.5
WAJM	PALATKA FL	44A	327.90	366.0	24605.7	88.5
WFGC	PALM BEACH FL	57A	327.90	366.0	24605.7	88.5
WJHG	PANAMA CITY FL	51A	327.90	366.0	24605.7	88.5
WMBB	PANAMA CITY FL	22A	327.90	366.0	24605.7	88.5
WPGX	PANAMA CITY FL	39A	327.90	366.0	24605.7	88.5
WFSG	PANAMA CITY FL	62A	327.90	366.0	24605.7	88.5
NEW	PANAMA CITY BEACH FL	64A	327.90	366.0	24605.7	88.5
WEAR	PENSACOLA FL	68A	327.90	366.0	24605.7	88.5
WSRE	PENSACOLA FL	40A	327.90	366.0	24605.7	88.5
WNBR	PENSACOLA FL	48A	327.90	366.0	24605.7	88.5
WJTC	PENSACOLA FL	66A	327.90	366.0	24605.7	88.5
WWSB	SARASOTA FL	34A	327.90	366.0	24605.7	88.5
WTSP	ST. PETERSBURG FL	48A	327.90	366.0	24605.7	88.5
WTTA	ST. PETERSBURG FL	67A	327.90	366.0	24605.7	88.5
WTOG	ST. PETERSBURG FL	58A	327.90	366.0	24605.7	88.5
WFSU	TALLAHASSEE FL	33A	327.90	366.0	24605.7	88.5
WTXL	TALLAHASSEE FL	17A	327.90	366.0	24605.7	88.5
WTWC	TALLAHASSEE FL	45A	327.90	366.0	24605.7	88.5
WEDU	TAMPA FL	60A	327.90	366.0	24605.7	88.5
WFLA	TAMPA FL	57A	327.90	366.0	24605.7	88.5
WTVT	TAMPA FL	19A	327.90	366.0	24605.7	88.5
WUSF	TAMPA FL	59A	327.90	366.0	24605.7	88.5
WFTS	TAMPA FL	29A	327.90	366.0	24605.7	88.5
WBHS	TAMPA FL	17A	327.90	366.0	24605.7	88.5
WPBF	TEQUESTA FL	64A	327.90	366.0	24605.7	88.5
WRXY	TICE FL	65A	327.90	366.0	24605.7	88.5
WBSV	VENICE FL	63A	327.90	366.0	24605.7	88.5
WPTV	WEST PALM BEACH FL	28A	327.90	366.0	24605.7	88.5
WPEC	WEST PALM BEACH FL	58A	327.90	366.0	24605.7	88.5

CALL	CITY - ST	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
WFLX	WEST PALM BEACH FL	27A	327.90	366.0	24605.7	88.5
WXEL	WEST PALM BEACH FL	59A	327.90	366.0	24605.7	88.5
WALB	ALBANY GA	19A	327.90	366.0	24605.7	88.5
WFXL	ALBANY GA	52A	327.90	366.0	24605.7	88.5
WGTV	ATHENS GA	49A	327.90	366.0	24605.7	88.5
WNGM	ATHENS GA	22A	327.90	366.0	24605.7	88.5
WSBT	ATLANTA GA	26A	327.90	366.0	24605.7	88.5
WAGA	ATLANTA GA	42A	327.90	366.0	24605.7	88.5
WXIA	ATLANTA GA	52A	327.90	366.0	24605.7	88.5
WTBS	ATLANTA GA	65A	327.90	366.0	24605.7	88.5
WPBA	ATLANTA GA	15A	327.90	366.0	24605.7	88.5
WATL	ATLANTA GA	67A	327.90	366.0	24605.7	88.5
WGNX	ATLANTA GA	47A	327.90	366.0	24605.7	88.5
WATC	ATLANTA GA	39A	327.90	366.0	24605.7	88.5
WVEU	ATLANTA GA	43A	327.90	366.0	24605.7	88.5
WJBF	AUGUSTA GA	23A	327.90	366.0	24605.7	88.5
WRDW	AUGUSTA GA	66A	327.90	366.0	24605.7	88.5
WAGT	AUGUSTA GA	48A	327.90	366.0	24605.7	88.5
WFXG	AUGUSTA GA	62A	327.90	366.0	24605.7	88.5
WTLH	BAINBRIDGE GA	23A	327.90	366.0	24605.7	88.5
WUBI	BAXLEY GA	51A	327.90	366.0	24605.7	88.5
WBSG	BRUNSWICK GA	54A	327.90	366.0	24605.7	88.5
WCLP	CHATSWORTH GA	50A	327.90	366.0	24605.7	88.5
WDCO	COCHRAN GA	33A	327.90	366.0	24605.7	88.5
WRBL	COLUMBUS GA	59A	327.90	366.0	24605.7	88.5
WTVM	COLUMBUS GA	48A	327.90	366.0	24605.7	88.5
WJSP	COLUMBUS GA	56A	327.90	366.0	24605.7	88.5
WLTZ	COLUMBUS GA	62A	327.90	366.0	24605.7	88.5
WXTX	COLUMBUS GA	61A	327.90	366.0	24605.7	88.5
WSST	CORDELE GA	68A	327.90	366.0	24605.7	88.5
WELF	DALTON GA	29A	327.90	366.0	24605.7	88.5
WACS	DAWSON GA	21A	327.90	366.0	24605.7	88.5
WMAZ	MACON GA	16A	327.90	366.0	24605.7	88.5
WGXA	MACON GA	45A	327.90	366.0	24605.7	88.5
WMGT	MACON GA	53A	327.90	366.0	24605.7	88.5
WGNN	MACON GA	35A	327.90	366.0	24605.7	88.5
WMSG	MONROE GA	19A	327.90	366.0	24605.7	88.5
WABW	PELHAM GA	42A	327.90	366.0	24605.7	88.5
WPGA	PERRY GA	50A	327.90	366.0	24605.7	88.5
WTLK	ROME GA	33A	327.90	366.0	24605.7	88.5

CALL	CITY - S	CH	PWR(KW)	HAAT(M)	SERVICE AREA(SQ KM)	DISTANCE TO CONTOUR (KM)
WSAV	SAVANNAH GA	65A	327.90	366.0	24605.7	88.5
WVAN	SAVANNAH GA	32A	327.90	366.0	24605.7	88.5
WTOC	SAVANNAH GA	15A	327.90	366.0	24605.7	88.5
WJCL	SAVANNAH GA	56A	327.90	366.0	24605.7	88.5
WCTV	THOMASVILLE GA	65A	327.90	366.0	24605.7	88.5
WNEG	TOCCOA GA	60A	327.90	366.0	24605.7	88.5
WVGA	VALDOSTA GA	26A	327.90	366.0	24605.7	88.5
WXGA	WAYCROSS GA	62A	327.90	366.0	24605.7	88.5
WCES	WRENS GA	44A	327.90	366.0	24605.7	88.5
KHBC	HILO HI	25A	327.90	366.0	24605.7	88.5
KGMD	HILO HI	22A	327.90	366.0	24605.7	88.5
KHAW	HILO HI	69A	327.90	366.0	24605.7	88.5
KHVO	HILO HI	19A	327.90	366.0	24605.7	88.5
KWHH	HILO HI	60A	327.90	366.0	24605.7	88.5
KHON	HONOLULU HI	69A	327.90	366.0	24605.7	88.5
KITV	HONOLULU HI	60A	327.90	366.0	24605.7	88.5
KFVE	HONOLULU HI	19A	327.90	366.0	24605.7	88.5
KGMB	HONOLULU HI	45A	327.90	366.0	24605.7	88.5
KHET	HONOLULU HI	43A	327.90	366.0	24605.7	88.5
KHNL	HONOLULU HI	63A	327.90	366.0	24605.7	88.5
KWHE	HONOLULU HI	40A	327.90	366.0	24605.7	88.5
KHAI	HONOLULU HI	52A	327.90	366.0	24605.7	88.5
KOBN	HONOLULU HI	23A	327.90	366.0	24605.7	88.5
KBFD	HONOLULU HI	31A	327.90	366.0	24605.7	88.5
KLEI	KAILUA KONA HI	17A	327.90	366.0	24605.7	88.5
KGMV	WAILUKU HI	59A	327.90	366.0	24605.7	88.5
KAII	WAILUKU HI	35A	327.90	366.0	24605.7	88.5
KMEB	WAILUKU HI	30A	327.90	366.0	24605.7	88.5
KMAU	WAILUKU HI	54A	327.90	366.0	24605.7	88.5
KOGG	WAILUKU HI	68A	327.90	366.0	24605.7	88.5
KWHM	WAILUKU HI	41A	327.90	366.0	24605.7	88.5
WOIT	AMES IA	67A	327.90	366.0	24605.7	88.5
KJWH	BURLINGTON IA	60A	327.90	366.0	24605.7	88.5
KGAN	CEDAR RAPIDS IA	16A	327.90	366.0	24605.7	88.5
KCRG	CEDAR RAPIDS IA	55A	327.90	366.0	24605.7	88.5
KOCR	CEDAR RAPIDS IA	49A	327.90	366.0	24605.7	88.5
KTVC	CEDAR RAPIDS IA	59A	327.90	366.0	24605.7	88.5
KBIN	COUNCIL BLUFFS IA	38A	327.90	366.0	24605.7	88.5
KWQC	DAVENPORT IA	38A	327.90	366.0	24605.7	88.5
KLJB	DAVENPORT IA	34A	327.90	366.0	24605.7	88.5